

METHOD OF POROGEN REMOVAL FROM POROUS LOW-K FILMS USING UV RADIATION

ABSTRACT

5 Methods of preparing a porous low-k dielectric material on a substrate are provided.
The methods involve the use of ultraviolet radiation to react with and remove porogen from
a porogen containing precursor film, leaving a porous low-k dielectric matrix. Methods
using oxidative conditions and non-oxidative conditions are described. The methods
described may be used to remove porogen from porogen-containing precursor films. The
10 porogen may be a hydrocarbon such as a terpene (*e.g.*, alpha-terpinene) or a norbornene (*e.g.*,
ENB). The resulting porous low-k dielectric matrix can then be annealed to remove water
and remaining silanols capped to protect it from degradation by ambient conditions, which
methods will also be described.

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